

3. Claims 2, 5 and 20 were canceled. Dependent Claims 3, 4, 6, 7 and 8 were amended accordingly.

Claim Rejections - 35 U.S.C. § 103

The rejection of Claims 1, 3, 4, 6-19 and 21-26 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,714,647 to Shipp, Jr. et al. (hereinafter “Shipp”) and U.S. Patent 5,817,584 to Singer et al. (hereinafter “Singer et al.”) is respectfully traversed, particularly in view of the following remarks.

The present invention as claimed in independent Claim 1 requires a meltblown web having a gradient fiber size structure comprising at least one layer of fine meltblown fibers adjacent at least one layer of coarse meltblown fibers, wherein adjacent layers of the meltblown web have a mean diameter difference of at least 4.0 microns. Similarly, the present invention as claimed in independent Claims 17 and 19 requires a meltblown web comprising at least one layer of coarse meltblown fibers adjacent at least one layer of fine meltblown fibers, wherein the difference between the mean fiber diameter of the coarse meltblown fibers and the mean fiber diameter of the fine meltblown fibers is at least 4.0 microns.

As set forth in the “Definitions” at pages 5 and 6 of the specification, for example, the term “coarse meltblown fiber” refers to meltblown fibers having an

average diameter of at least about 5.0 microns and the term “fine meltblown fibers” refers to meltblown fibers having an average diameter of less than about 5.0 microns.

At paragraph 2 of the Office Action, the Examiner alleges that it is known to use fine fibers having a diameter of from 0.5 to 10 microns and larger fibers having a diameter of greater than 10 microns to make a gradient depth filter, as described in Shipp at Col. 2, line 64 through Col. 3, line 12. However, Shipp discloses that U.S. Patent 3,073,735 issued to Till et al. teaches a process wherein fine plastic fibers are formed on a conveying belt having a diameter of from 0.5 microns to about 10 microns and **staple** length rayon fibers having a diameter of 10 microns and greater on top of the fine plastic fibers. Unlike the present invention, Till et al. does not teach or suggest depositing coarse meltblown fibers onto fine meltblown fibers.

Shipp discloses a composite depth filter medium comprising layers built up layer by layer progressing from fine fibers on one side of the web to extra coarse fibers on the opposite side of the web. Shipp at Col. 5, lines 59-63. The depth filter medium has two layers of fine fibers, and a layer each of medium, coarse, and extra coarse fibers. As shown in the Example 1 table, adjacent layers of fine and coarse fibers **do not** have a mean diameter difference of at least 4.0 microns, as required by Applicants' claimed invention. Shipp at Col. 6, lines 21-59. Further, as the Examiner

recognizes in paragraph 2 of the Office Action, Shipp fails to teach sandwiching the meltblown web between two other nonwoven (e.g. spunbond) layers.

Shipp does not teach or suggest a nonwoven fabric laminate including a meltblown web comprising at least one layer of fine meltblown fibers adjacent at least one layer of coarse meltblown fibers, wherein adjacent layers of the meltblown web have a mean diameter difference of at least 4.0 microns, as required by Applicants' claimed invention. The deficiencies of Shipp are not overcome by Singer.

Singer discloses SMS fabrics in the background, but provides no detail (Col. 1, lines 17-25). Singer also discloses a breathing mask fabric having a nonwoven microfiber first web of fibers having an average diameter of between 10 and 25 microns and a microfiber second web of fibers having an average diameter of less than about 10 microns. (See Claim 1). Singer does not teach or suggest a nonwoven fabric laminate including a meltblown web comprising at least one layer of fine meltblown fibers (having a diameter less than 5.0 microns) adjacent at least one layer of coarse meltblown fibers (having a diameter of at least 5.0 microns), wherein adjacent layers of the meltblown web have a mean diameter difference of at least 4.0 microns, as required by Applicants' claimed invention.

Regarding Claims 9, 10, 12 and 13, the Examiner alleges that although the claimed permeability and opacity are not explicitly taught by Singer or EP

0729375, it is reasonable to presume that said limitations would be met by the combination of the two references. Claims 9, 10, 12 and 13 depend from and further limit independent Claim 1, which Applicants believe is patentable for at least the reasons presented above.

Regarding Claims 21-26, the Examiner alleges that it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the SMS composite fabric of Singer and EP 0729375 for the disclosed applications. Claims 21-26 depend from and further limit independent Claim 19, which Applicants believe is patentable for at least the reasons presented above.

Accordingly, Applicants respectfully urge that Shipp and Singer, alone or combination, do not render Applicants' claimed invention obvious in the manner required by 35 U.S.C. § 103(a). Thus, Applicants respectfully request withdrawal of this rejection.